road along which a water-pipe is laid. These springs yield 850 gallons per day in the dryest time, and in the wet season as much as 5000 gallons per day. Thus a very serious problem is solved.

The decision of the general plans for the Observatory has fallen largely to the President of the Lick Trustees, Capt. R. S. Floyd. He has given to these questions an amount of time which few persons could possibly bestow on a matter outside of ordinary professional life. Since 1876 he has personally visited most of the observatories of Europe and America and has corresponded with astronomers all over the world. In 1879 he visited Washington, and together with Profs. Newcomb and Holden, of the Naval Observatory, he prepared a series of drawings from which the Observatory was to be built, and ordered the first of the instruments. The general plan of the Observatory is to give the place of honour to the large dome (some seventy-five feet in diameter). This is to contain a refracting telescope by Alvan Clark and Sons, of Cambridgeport, who have made not only the largest, but the best telescopes in the world. Their first telescopes were six inches in aperture and of exquisite definition. Without losing in precision, they have successively made object glasses of 8¼, 9⅛, 12, 15½, 18½, 23, and 26 inches. They are now engaged on an objective of 30 inches for the Russian Government, and will soon commence the Lick telescope of 36 inches aperture, for which they have served so magnificent an apprenticeship. This is to occupy the whole of the south end of the plateau of the summit. At the northwest corner stands a dome (completed in November, 1881) which contains a 12-inch telescope by Alvan Clark, one of his very finest. Connecting the two domes is to be a one-story building containing a clock room, workshops, a library, offices and bedrooms for observers. A transit house of iron (completed in 1881) stands a few feet east of the smaller dome, and just south of this is the photo-heliograph, with its house. A few feet east of this the six-inch meridian circle (by Repsold of Hamburg) is to stand, which, with the four-inch transit (by Fauth of Washington) completes the list of meridian instruments. A four-inch comet-seeker, by Clark, occupies a small dome. The main building will be built of brick. The bricks of clay, found close to the Observatory, are made under a contract which saves the Observatory some fifty per cent. of the usual cost. About 2,000,000 bricks are now made and ready to deliver, and these will just about suffice for the constructions agreed upon.

It will be seen that an observing station of importance is already established on the mountain, containing an equipment of which many European observatories would be proud. It may be said that the whole of the fund expended to date is less than the cost of the road to the summit, and this includes all expenses. This equipment has recently been utilised in the observation of the transit of Mercury on November 7, 1881, by Prof. Holden and Mr. Burnham, who were invited by the trustees to set up their first instruments. In 1879 Mr. Burnham spent three of the summer months on the mountain, and used his six-inch telescope in regular observations, the object being to compare the conditions of vision at this high altitude with those at lower levels. His conclusions were extremely favourable to the Mount Hamilton site, and from his report there is little doubt that during the summer months this site is more favourable than that of any observatory now established. During the winter, storms prevail, but the snow is not very deep, and does not lie long, and the temperature is not very low. When it is clear, in the rainy season, it is perfectly so, and the vision compares favourably with the average conditions at Eastern observatories. It is obvious that if the management of the Observatory affairs remains in the same able control, we shall have in a few years one of the most admirably equipped observatories in the world, on a site far superior to any; and without being too sanguine, it will be safe to expect much from such an institution in proper hands.

NOTES

MR. MACLEOD (Assistant Secretary, Education Department, Whitehall) having resigned, will be succeeded by Col. Donnelly, R.E., now Director of the Science Division, who, while retaining his present post, will, as Assistant Secretary of the Education Department, be the chief officer of the Science and Art Department at South Kensington.

THE death is announced of Prof. Theodore Schwann of Liége, the eminent biologist, at the age of seventy-two years. We hope to refer to Prof. Schwann at length next week. We also learn of the death of Hermann Schlagintweit, well known as a naturalist, and in conjunction with his brother Emil, as an explorer of the Himalayas.

THE death is announced of Signor Carlo Piaggia, who has done some good exploring work in the region to the south of Abyssinia. Signor Piaggia was proceeding from Khartoum to Fadassi to join Herr Shuver, to whose journey we referred last week.

WE regret to learn that Mr. Joseph Thomson is daily expected home. It may be remembered that he was engaged for two years by the Sultan of Zanzibar to geologise along the Rovuma, and in other districts of the Sultan's dominions. We give elsewhere some of the results of his great excursion along the Rovuma, where he failed to find coal, which the Sultan was anxious he should do. We are informed that the Sultan is so disappointed at the result that he has abruptly broken the engagement, and sent Mr. Thomson home with payment only for the time he has been out. This is disappointing, as much good work would certainly have been done by Mr. Thomson had he been allowed to pursue his explorations. Evidently the Sultan has much to learn. We trust Mr. Thomson will soon find suitable employment for his exceptional ability as an explorer.

SOME very important experiments have recently been carried out at the Conservatoire des Arts et Métiers, upon the accumulating power of Faure's secondary battery. A committee consisting of MM. Tresca, Potier, Joubert, and Allard conducted operations. Thirty-five accumulators of the spiral form, each set in a cylindrical stoneware pot about 35 centims. high and 25 centims. diameter, were charged in series by the current from a Siemens' dynamo-electric generator worked by a steam-engine. The working electromotive force of an accumulator was found to be from 2·15 to 2·5 volts. For twenty-two hours the battery was charged with a current whose average strength was 8·5 ampères, the total work expended in charging being 6,020,000 kilogrammetres. The total work of the steam-engine was also measured by a dynamometer, the Siemens' generator having, as it appeared, an efficiency of 71 per cent. The battery was then discharged through eleven Maxim lamps, the potential and current being accurately measured from time to time, and although the discharge lasted eleven hours there appeared to be 70 per cent. of the original energy given out in the discharge. A complete report is promised by the committee.

THE umbrella trade (according to the *Scientific American*) threatens the existence of the pimento (pepper) plantations of Jamaica. It was shown by an official estimate made at Kingston last autumn, that more than half a million umbrella sticks were then awaiting export to England and the United States. These sticks were almost without exception pimento, and it is not surprising that owners and lessees of pimento walks are becoming alarmed at the growth of a trade which threatens to uproot, in a

few years, all the young trees. The export returns for the last five years show an average of 2000 bundles of sticks sent out from Jamaica annually, and the returns for the first three-quarters of 1881 show an export of over 4500 bundles, valued at 15,000 dollars. Each bundle contains from 500 to 800 sticks, each of which represents a young bearing pimento tree.

THE results of a third year's observation of spirit-levels at Secheron, for elucidation of periodic movements of the ground, are given by M. Plantamour in the December issue of *Archive des Sciences*, and Col. von Orff also communicates results obtained at the Observatory of Bogenhausen (3 to 4 km. from Munich). M. Plantamour shows that the oscillations, both in the east-west and the north-south direction, present anomalies, or differences from year to year, which cannot be explained by mere variations of the temperature of the air. The earth's surface he supposes to be in a state of constant gentle undulation, the direction and amplitude of which varies in each locality according to the nature of the ground and the forces in action; and the effect may strengthen, or neutralise that of the air temperature on the ground, or even produce a movement in an opposite direction. Col. von Orff's observations afford ground for supposing that the spirit-level variations are, partly at least, caused by variations of heat in the formation on which the Observatory rests.

"RHOPALOCERA MALAYANA: a Description of the Butterflies of the Malay Peninsula," is the title of a work which will shortly be published by Mr. W. L. Distant. It is proposed in this work to give a monographic revision and synonymic catalogue of the butterflies of the Malay Peninsula, including the islands of Penang and Singapore. The fauna of the western side of the Peninsula is at present best known, and will be here principally treated. This area will extend from Quedah to Johore, and thus comprises the Straits Settlements of Province Wellesley, Perak, and Malacca. Each species (and variety where considered necessary) will be represented by a coloured figure, and the details of its habits, variation, and geographical distribution will be given as far as our present knowledge will allow. An introduction to the classification will also be added, with a tabular arrangement of the genera. The Malayan butterfly fauna is very rich in species, and very typical of the Oriental region. It includes numbers of species which are found in Continental India, and many others which are common to Sumatra, Java, and Borneo. It is therefore anticipated that the work may prove useful to others than Malayan entomologists alone. It is to the scientific enterprise of Mr. D. Logan of Penang that the inception of this work is due, and an important part of the material on which it is based will be derived from that gentleman's collectors, who have been despatched to Quedah, Malacca, and Johore. Beside the collections made by the author, when in Penang and Province Wellesley, many others have been examined, and much information acquired, during the last ten years. The work will be comprised in six or seven royal quarto parts, each containing four coloured plates, and about twenty-eight pages of letterpress.

CONTINUING his researches on the Hydroids and Medusæ of the White Sea, and giving a *résumé* of his three years' exploration in Solovetzky Bay, Prof. Wagner states that ten different species of Medusæ inhabit the waters of this lake: *Lizzia rota*, *Bougainvillia superciliaris*, *Circe kamtschatica*, *Sarsia tubulosa*, *Plankayon hyalinus* (n. sp. et g.), *Ægionopsis Laurentii*, *Tiara pileata*, *Staurophora laciniata*, *Cyanea Arctica*, and *Aurelia aurita*. Each of these forms show some special adaptation to the medium they live in. The two first are the simplest, the primary ones, so to say, and their most important feature is the great development of the generative organs. The elegant form of the bell of the *Circe* is adapted to a rapid and ingenious motion, and its long tentacles are perfectly developed for warning it against any danger. The voracious *Sarsia* is adapted for continually searching for and catching prey at different depths, by means of its very long tentacles. The *Tiara* is characterised by a perfect development of its great stomach and mouth-ciliæ, and the large vessels are adapted for the circulation of a great amount of nutritive liquids. The *Ægionopsis* is distinguished by its large bell, which affords great room for the sexual sinuses of the stomach, whilst four tentacles inclosing the bell are protective of this great sexual laboratory. The *Staurophora* has the same characters, with some modifications for the enlargement of the nutritive and sexual organs. The flat and flexible bell of the *Cyanea* is an immense nutritive organ, to which large tentacles and a great catching-bag supply plenty of food. And the *Aurelia* is, so to say, a *résumé* of all these adaptations. Altogether they afford a fine illustration of the Etienne Geoffroy St. Hilaire's law of "organic equilibrium, or compensation of organs." All are equally well-armed for the struggle for existence and for the life in common in the waters of the White Sea. If the lazy and badly-armed *Lizzia* and *Bougainvillia* are often subject to starvation, a few individuals on the other hand suffice for producing millions of progeny. Prof. Wagner also makes some interesting remarks with regard to Milne Edwards's law as to the tendency of Nature towards diversity and economy of means.

WE have repeatedly had occasion to refer to the excellent work now in course of publication—"Anatomisch-physiologischer Atlas der Botanik," by Dr. Arnold Dodel Port, of Zürich University, and have pleasure in announcing that the 5th part of this remarkable work has just left the press. It is a specially interesting one, and contains the following subjects:—(1) *Marchantia polymorpha*, a cosmopolitan liverwort-moss, with its characteristic fruit receptacles and sporanges, of which the whole development is illustrated; (2) *Taxus baccata*, yew, with the simplest possible female flower, showing the anatomy of the ripe seed and the first germination stages of the latter; (3) *Oedogonium diplandrum Juranyi*, one of the oospore-forming filamentous Algæ, showing the green asexual zoospores, the yellowish androspores, the yellow spermatozoids, and the dwarfed males. The whole process of fertilisation and the development of oospores is also represented, this being one of the most interesting Oedogonieæ; (4) *Chara fragilis*, showing the rotation of the cell contents in the tubular cells and the female organs; (5) *Cydonia vulgaris*, Quince, showing the development of the flower and its fertilisation by the honey-bee; (6) *Centaurea cyanus*, Blue Cornflower, with the development of the protandrous flowers, showing the sensitiveness and functions of the contractile stamens facilitating the fertilisation by insects carrying pollen from other flowers. The author hopes to publish Part 6 early in April next, and Part 7 in the autumn, thus completing the work.

THE Danish Society for the Protection of Animals (under the patronage of His Majesty the King of Denmark) offers two prizes, of 2000 and 1000 francs respectively, for the best and second best scientific essay on that part of the Vivisection question, which concerns the possibility of replacing *living* by *recently killed animals* for the sake of physiological investigations. The essay should sufficiently indicate previously unknown cases, in which such a substitution of dead material may be applicable. In these essays the possibility and desirability of replacing painful experiments on animals by some *other methods of research*, may also be a subject of inquiry. The essays may be written in the Danish, Swedish, English, French, or German languages, and forwarded before September 1, 1882, to His Excellency Mr. A. de Haxthausen, President of the Danish Society for the Protection of Animals, at the office of the Society, Copenhagen. "Our Society is only too well aware that the claims of humanity are not to be satisfied by these means, as extensively as it could wish. It will however feel itself richly rewarded, if its efforts

result in diminishing the number of experiments in which animals are subjected to great and lingering agony. In this earnest hope we respectfully request all humanely disposed scientific men of every country in the world, kindly to comply with our invitation."

THE Russian representative at Peking is said to be urging on the Chinese Government the construction of a line of telegraph across Mongolia, to connect the Shanghai line with the Russian land-lines of Siberia. Should this line be carried out Peking will be in telegraphic communication by two separate routes with Europe; but it is said that the Chinese do not view the project with very favourable eyes. The new Chinese telegraphs seem to be doing their work very well. The people living along the route have abandoned their hostility, which has given way before feelings of wonder and admiration. The common people call the telegraphs "letter-poles," and think that the letters are despatched through the wires, which are believed to be hollow.

THE popular belief that the present Japanese are iconoclastic in their zeal for removing the ancient monuments of the country would seem to be a mistake. We read in the *Japan Gazette* that a society, composed of the Prime Minister, the Assistant Prime Minister, and other high officials and nobles, has just been formed for the protection of old temples, shrines, and other remnants of antiquity. A sum of two millions of *yen*, or about 400,000*l*. sterling, has been collected, and it is intended to devote the interest of this amount to the purposes of the Association. Not long since we read of a large collection—the present Minister for Foreign Affairs being among the principal subscribers—being made for the maintenance and repair of the Temple of Hachiman, or the Genius of War, at Kamakura, which contains many ancient and interesting relics. Indeed the work of destruction seems to have been confined to feudal castles, fortifications, &c. The former residences, or *yashikis*, of the nobles have been dismantled and converted into schools, hospitals, barracks, public offices, &c. Many picturesque structures throughout the country have thus been removed; but the Government deemed this absolutely necessary in order to eradicate feudal feeling, as well as to destroy strongholds for possible malcontents. The beautiful temples and shrines of old Japan still remain, and are, we see, to be maintained unimpaired.

THE Chinese authorities of Shanghai recently issued a quaint decree respecting the neglect of physicians to attend at once on their patients, and the high fees which they charge. They give notice that it is the duty of all physicians to use their knowledge for the benefit of the people; when people are sick they must be ready to attend upon them whenever they are sent for, without regarding the hour of the night or day, or the state of the weather. When people are ill they long for the presence of the doctor as the grain of seed longs for the rains. Instead of doing this, however, the physicians now think that they possess great skill, and not only charge high fees, but insist on being paid full hire for their chair coolies, and they do not care what becomes of the patient so that they get their fees. If these were only charged to the wealthy it would not so much matter; but the poor have to pay them also. An evil practice (the decree goes on) also exists by which doctors will not visit their patients before one o'clock in the afternoon; some will even smoke opium and drink tea until late in the evening. These are abuses, the magistrates say, which they will on no account permit. Doctors must attend their patients at all times; they must, if necessary, visit them several times daily; they must think more of them and less of their fees. Notice, therefore, is given to all officials and people that a physician who does not attend when he is called must only receive half his fees and half his chair hire. "If you physicians delay your visits you show your wickedness, and sin against yourselves." The decree is a model one for a paternal government; argument, entreaty, objurgation, exposition, threats, are all mingled in due proportions.

WHILST smaller glaciers leave only shallow grooves and scratches on the surface of the rocks, it is easy to see that the mighty glaciers of the Glacial period must have covered all the surface of the wide track they moved upon with deeper grooves and with low elongated ridges. Finland displays at every step an illustration of this activity of glaciers, which one of the Russian explorers of that country has described as a "telescopic glacier-scratching." Now, M. Koudravtseff, the geologist of the Russian White Sea Expedition, gives, in the *Proceedings* of the St. Petersburg Society of Naturalists, a description of the same phenomenon on the Kola Peninsula and on the west coast of the White Sea. All these scratches, troughs, and elongated embossments have the direction from west to east, showing thus that in the neighbourhoods of the White Sea the great Scandinavian and Finnish ice-covering moved towards the east.

MR. PENGELLY, F.R.S., was presented with an admirable portrait of himself at Torquay on Thursday last, as a mark of the admiration, respect, and regard in which he is held by his fellow-townsmen and friends elsewhere.

PROF. ALBERT GAUDRY, the eminent palæontologist, has been elected to the place in the Paris Academy of Sciences rendered vacant by the death of the late M. H. Sainte-Claire Deville.

THE Commission appointed by the French Chamber of Deputies to deliberate on the sale of the jewels of the French Crown has interrogated the Professor of Mineralogy of the Museum, requesting him to mark those stones which it would be desirable to send to the collection of that establishment.

SIR ERASMUS WILSON has presented a sum of ten thousand pounds to found and endow a chair of Pathological Anatomy in Aberdeen, "as an expression of my regard for an institution in which my father, a native of Aberdeen, received his medical education, and as a recognition of the honour which the University has been pleased to confer on me by granting me the distinguished degree of LL.D."

THE Etna Observatory, erected on a small mount near the crater, and so placed that a current of lava would probably divide in two and avoid it, has been completed. It is 2943 metres above the sea; the Great St. Bernard Monastery is 2491, and the St. Gothard 2075 metres.

THE Thirty-fifth Annual General Meeting of the Institution of Mechanical Engineers will be held to-day and to-morrow, at 25, Great George Street, Westminster. The chair will be taken by the President at half-past seven p.m. each evening. The following papers will be read and discussed:—On meters for registering small flows of water, by Mr. J. J. Tylor, of London; on the Bazin system of dredging, by Mr. A. A. Langley, of London; on hydraulic lifts for passengers and goods, by Mr. Edward Bayzand Ellington, of London; on improved appliances for working under water, or in irrespirable gases, by Mr. W. A. Gorman, of London; on power hammers with a movable fulcrum, by Mr. Daniel Longworth, of London.

FROM the Prospectus of Lectures and Classes for the second term of the present session of University College, Nottingham, we are pleased to see that the institution is in full working order. Both day and evening classes and lectures are well provided for, science occupying a prominent place.

THREE out of the eight articles in the new number of the *Quarterly Review* are scientific:—An article on Sir Charles Lyell, *à propos* of his recently published Life and Letters;

another on Mr. Darwin's work on Earthworms; and a third on Dr. Günther's work on Fishes.

THE Austrian naturalist, Dr. Karl Helmes, has discovered a new viper in a valley of the Makattan Mountains in Central Egypt. He has named it *Ammodytes-ægyptiaca Helmesii*. It has nothing in common with *Cerastes cornutus*, the yellow horned viper. The principal difference is that the horn-points are not above the eyes but about 4 mm. behind them. The animal does not hiss like other serpents, but makes a rattling noise as when water is thrown upon red-hot iron. The discovery will be all the more interesting to zoologists as this is the first new species discovered for many years.

THE Budget Commission of the German Reichstag has again granted 75,000 marks (3750*l.*) for the investigation of Central Africa. The Berlin African Society intends to send out two expeditions during 1882, one to start from the west and another from the south-west. It is further expected that the German station at Hakoma (Lake Tanganyika) will soon be able to pay its own expenses by establishing plantations and opening commercial relations with the neighbouring tribes.

THE Academy of Meteorological Aërostation of France has sent to M. Paul Bert a report which was adopted at its last session, and which suggests that an international exhibition of "Aërial arts" should be held in Paris in 1883, to commemorate the invention of balloons by the two Montgolfiers in 1783. The first public experiment having taken place at Annonay on June 5, 1783, a local commemoration is to take place in that town. The "Aërial arts" are to include every industry, science or art, relating to gas or the atmosphere, which is supposed to have any connection directly or indirectly with aërostatic experiments.

A SUBMARINE eruption took place recently in the Gulf of Missolonghi, not far from Anatolikon. For five days a strong odour of sulphuretted hydrogen was noticed in the neighbourhood, and whole ships' cargoes of dead fish were washed ashore.

A SMART shock of earthquake occurred at Iquique on November 13, and the master of the German barque *Shakespeare*, from Liverpool, reports that he felt it when about eight miles to the westward of Punta Arenas with such severity that he imagined the vessel had struck on a rock until the lead showed that he was in deep water. On Saturday night an earthquake shock was felt at Agram, lasting three seconds, and accompanied by a rumbling noise. Intelligence reached Plymouth on Monday from Yokohama of a destructive earthquake in China. The news, which was despatched from Yokohama on December 25, coming by way of San Francisco and New York, is exceedingly meagre. It simply announces the fact that a severe earthquake had occurred in the district of "Kantcheou," and that more than 250 people had been killed.

THE additions to the Zoological Society's Gardens during the past week include a Markhoor (*Capra megaceros* ♀) from Afghanistan, presented by Lieut.-Col. St. John; a Roseate Cockatoo (*Cacatua roseicapilla*) from Australia, presented by Miss Morson; a Common Raven (*Corvus corax*), British, presented by Mr. S. J. Elyard; a Spanish Terrapin (*Clemmys leprosa*), South European, presented by Mr. H. Balfour; a collection of Sea Anemones, British Seas, presented by Mr. A. D. Bartlett; a Malayan Bear (*Ursus malayanus*) from Malacca, purchased; a Cashmere Shawl Goat (*Capra hircus*, var.), born in the Gardens.

GEOGRAPHICAL NOTES

AT the meeting of the Geographical Society last week, Sir John Kirk read a paper by Mr. Joseph Thomson, on his examination of the Rovuma basin, East Africa, during his recent trip in search of the long-talked of coal-beds. These were supposed to be situated at the Mavitu village of Itule on the banks of the Lujende, some three days' march from its confluence with the Rovuma, but on investigation proved to be only some irregular layers of bituminous shale, which are of no practical use. Though disappointed in the primary object of his journey, Mr. Thomson has been able to add much to our knowledge of the geography of the Rovuma region, having traversed between 600 and 700 miles of country, besides furnishing many interesting particulars respecting the seven tribes, or remnants of tribes, which are found there. A paper by the Rev. Channey Maples, of the Universities' Mission, was afterwards read, on Makua Land between the Rivers Rovuma and Luli, a tract of country hitherto entirely unknown. Mr. Maples had hoped to have gone right through from Masasi to Mozambique, but on his arrival at Mvalixa's, the capital of the Meto Makuas, he was unable to induce his followers to proceed further. He had, therefore, to abandon his projected visit to the fierce branch of the Makua tribe, called the Walomwe; but what was more annoying, his hopes of verifying the existence of a snowy mountain, named Irati by the natives, and said to be about half way between Meto and Mozambique. In the discussion which followed the reading of these papers, Sir John Kirk made some interesting remarks on the great expansion of the india-rubber trade in East Africa during recent years, the value of the annual export having risen from *nil* to about a quarter of a million sterling.

AFTER his recent discovery of the source of the River Lujende in what he supposes to be the unexplored northern portion of Lake Shirwa, the Rev. W. P. Johnson, of the Universities' Mission, followed the course of the river with a view to returning to his station at Mataka's town, but he was met outside and informed by the chief that his house had been utterly wrecked and his very books torn to pieces and scattered to the four winds of heaven. The outrage appears to have been committed by the owners of a slave-caravan, who believed that Mr. Johnson had contrived to send down information which had enabled Capt. Foot, R.N., to stop them some fifteen miles from the coast. Mr. Johnson had consequently been obliged to go to Zanzibar to refit, and as it would be impossible to settle again at his old station for the present, he intends to establish himself at Losewa, on the eastern shore of Lake Nyassa, in about S. lat. 13°. Thence he hopes to work Mataka's town, and he ought to be able to obtain useful information about this almost unknown side of the lake.

A TELEGRAM from St. Petersburg states that a scientific expedition, consisting of members of the Russian Geographical Society, the Imperial Academy of Sciences, and others, is being equipped for the purpose of making historical and ethnographical researches in Bulgaria and Roumelia. Prince Alexander of Bulgaria has contributed 4000*l.* towards the expenses of the expedition, in the work of which it is hoped Prince Vogoride will join.

MR. CUTHBERT PEEK is to read a paper on his journey in Iceland last summer, at the Geographical Society's meeting on January 30.

MR. BARHAM, an experienced surveyor, is to start this week for West Africa, for the purpose, it is said, of surveying a line for a light railway from the Gold Coast littoral through the little-known gold-mining region of Wassaw, which will pass the property of several mining companies. The country which will be opened up by this railway, if it be constructed, is rich in palm-oil, india-rubber, &c., in addition to the precious metal.

THE first number of *Petermann's Mittheilungen* for this year contains a letter from Mr. Schuver, giving details of his journey on the Upper Nile, to which we have already referred. There is a good summary of the Arctic work of the year, with special reference to Wrangel Land, of which island an excellent map is given from recent surveys. An interesting sketch is given of convict life in Siberia, and a summary of recent work in the Congo basin. A brief but valuable sketch of the Karachis of the Caucasus, followed by the monthly notes, concludes the number. A valuable geological map of West Africa, after data furnished by Dr. Lenzs accompanies the number.

THE new part (Heft i. band iii.) of the *Mittheilungen* of the German African Society contains several communications. Dr. Buchner has reached Loanda on his return journey. There is a series of interesting letters from the members of the German